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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,011	01/17/2001	Kevin W. Burrows	206584	3590

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EXAMINER

FILIPCZYK, MARCIN R

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 03/30/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/764,011

Applicant(s)

BURROWS ET AL. 1

Examiner

Marc R Filipczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-19 and 21-66 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-5, 7-19 and 21-66 is/are rejected.
7) ☒ Claim(s) 2, 12, 14, 16, 26, 28, 33, 38, 43, 45, 47, 52, 57, 62, 64 and 66 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 17 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

This action is responsive to Applicant's response filed on March 18, 2004 (paper # 8). The information disclosure statement (IDS) received on 2/17/2004 is noted. Claims 1-5, 7-19 and 21-66 remain for examination.

Claim Objections

Claims 2, 12, 14, 16, 26, 28, 33, 38, 43, 45, 47, 52, 57, 62, 64 and 66 are objected to because of the following informalities: A "computer-readable medium" performing the steps of an independent method claim must be written in an independent claim format comprising all the method steps.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-5, 7-19 and 21-66 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth whether the invention is within the technological arts.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the

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“progress of science and the useful arts” (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a method claim to pass muster, the recited steps must somehow apply, involve, use, or advance the technological arts.

In the present case, independent claim 1 only recites an abstract idea. The recited steps of merely obtaining a median element do not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper. These steps only constitute an idea of how to select a median.

Since the claimed invention, as a whole, is not within the technological arts as explained above, claim 1 and claims 2-5, 7-19 and 21-66 which depend from claim 1 or contain similar subject matter as claim 1, are deemed to be directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-19 and 21-66 are rejected under 35 U.S.C. 103(a) as best as Examiner is able to ascertain as being unpatentable over “INTRODUCTION TO ALGORITHMS” by Cormen, Leiserson and Rivest (hereinafter “CLR”) in view of “Indexing Large Metric Spaces for Similarity Search Queries” by Bozkaya and Tolga (hereinafter “BT”).

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Regarding claims 1-5, 7-19 and 21-66, CLR discloses creating and searching (page 388, CLR) a balanced binary tree using nodes and assigning values (page 386, fig. 19.4, CLR), but does not expressly teach a method for creating a binary tree from a list of elements, wherein the list includes left and right side groupings.

(Note: creating a binary balanced tree involves inserting left and right descendent nodes)

However, BT teaches indexing large metric spaces for similarity search queries (title, BT) in which a binary vp-tree is constructed (binary trees) by subdividing a list into two lists of equal cardinality at the median (pages 6 and 7, section 3.3). BT also teaches breaking up the two lists and forming an additional median (page 10, 3.8 and 3.9, BT).

(Note: binary vp-tree is introduced as a binary tree, see page 5, BT)

Further, selecting a side for processing, where for example left side groupings are in preference to right side groupings was a common programming technique before the Applicant's claimed invention. Hence, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to create binary tree structures by reading and subdividing the list by use of a median as taught by BT to effectively construct a tree structure including all the elements in the list.

(Note: elements in a list may represent data of any type i.e. logged events)

Response to Amendment

Applicant's arguments filed on March 18, 2004 have been fully considered but they are not persuasive. The arguments and responses are listed below.

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Applicant argues on page 28 of the 3/18/2004 response, that given a list of three elements A, B, and C, using BT's (prior art) iteration, C can be chosen as the arbitrary top node (root node), but according to the recited claims, element B must be chosen as the root node. Further, BT requires calculation of distances or median, contrary to the method of the present invention.

In response to Applicant's arguments, Examiner agrees. While it is true that BT may select C to be the root node, BT may also select element B to be the root node. Note, BT's system uses a method of reading a list of elements of a set to account for the total number of elements in that set, call it "cardinality" (pages 7 and 10), and selects an "arbitrary element" as a starting element of the set S, then using the cardinality BT notes the most distant element from the arbitrary element and based on these two elements, the size of the set is obtained and a median is selected (pages 7 and 10). Thus, BT's system is not limited to a given order of elements in a set (list), but instead may choose any element as a starting point to generate a B-tree. Further, the calculation involved in BT is specific to the list itself and is not needed to obtain a median.

With respect to all the pending claims 1-5, 7-19 and 21-66, Examiner respectfully traverses Applicant's assertion based on the discussion cited above, as such, Examiner presents the same rejections.

Conclusion

To expedite the process of examination Examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g. 35 U.S.C. 112, objections and the like) set forth by the Examiner that Applicants provide and link to the most specific page and line numbers of the disclosure where the best support is found (see 35 U.S.C. 132).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc R Filipczyk whose telephone number is 703-305-7156. The examiner can normally be reached on Mon-Fri, 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MF

March 27, 2004



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SUPERVISORY PATENT EXAMINER
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